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Notice of Jelly Fishes in the Carboniferous of Nebraska, "Medusina Walcotti"

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35

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NOTICE OF JELLY FISHES IN THE CARBONIFEROUS OF NEBRASKA, MEDUSINA WALCOTTI

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GEOLOGICAL COLLECTIONS OF HON. CHARLES H. MORRILL

195 B

NOTICE OF JELLY FISHES IN THE CARBONIFEROUS OF NEBRASKA
MEDUSINA WALCOTTI, SP. NOV.

BY ERWIN HINCKLEY BARBOUR

In visiting the quarries of the State, certain quadripartite objects suggesting the form of jelly fishes have long attracted the writer's attention. They are large and coarse, and were assumed to be imitative concretions. However, the total number observed seems to strengthen the probability that they are of organic origin. In the fall of 1913, while conducting a field class through the Burlington Quarries, located about two miles northwest of South Bend, they were noted again in a new locality, and three specimens were obtained. Two of these were unusual examples, and showed sufficient structure to identify them with the Medusae.

Dr. Charles D. Walcott, to whom a specimen was submitted, concurs in the belief that these are jelly fishes and not concretions. To those living upon the coast, jelly fishes are familiar objects, but to those living far inland, they are not, and it may be well to explain in a sentence or two that they are soft-bodied, more or less transparent, free-swimming, marine animals common to the coast. They are variously described as being bell-like, umbrella-like, cup-like, dome-like, and disk-like. As they float or swim in the water, sometimes in immense numbers, they

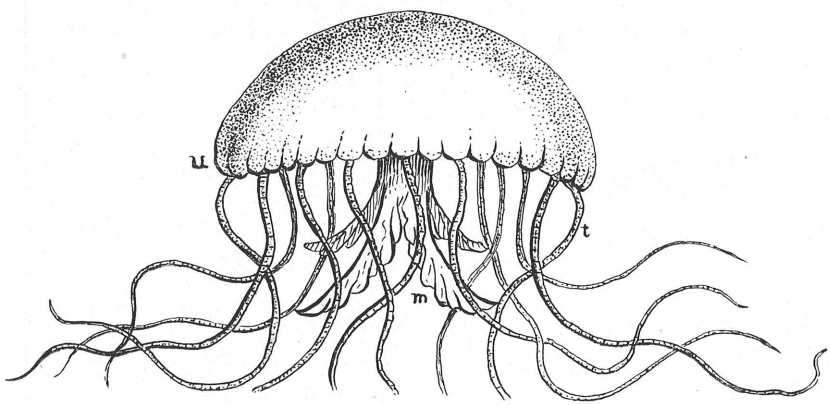

Fig. 1.—Sketch of a simplified jelly fish: u, umbrella; m, manubrium with four mouth lobes; t, tentacles or feelers.

suggest animated bubbles. The comparison seems the more fitting because ordinarily, there is so little substance in their bodies. By vigorous contractions and pulsations of the swimming-bell, the creature is propelled. The upper or convex side is called the umbrella, and the under or concave side is called the sub-umbrella. The clapper, technically known as the manubrium, hangs from the center of the bell. The mouth, situated at the lower end of the clapper, is usually four-lobed, and opens into the stomach or digestive pouch, which commonly branches into four radiating canals. The rim of the bell may be plain, or it may be variously lobed and ornamented, and set with tentacles or feelers. The sensory organs, tactile, auditory, and visual, are rudimentary and primitive. Morphologically, jelly fishes (Medusae) may be viewed as polyps having free-swimming adaptations. In size they vary from three or four inches to seven feet in diameter.

Since jelly fishes are composed so largely of water, in some species as much as 99 per cent, or more strictly speaking excessively watery gelatin, the wonder is that even traces of such delicate and perishable organisms are to be found. That they are found at all is due to the toughness of their filmy skins. Some of the larger and coarser jelly

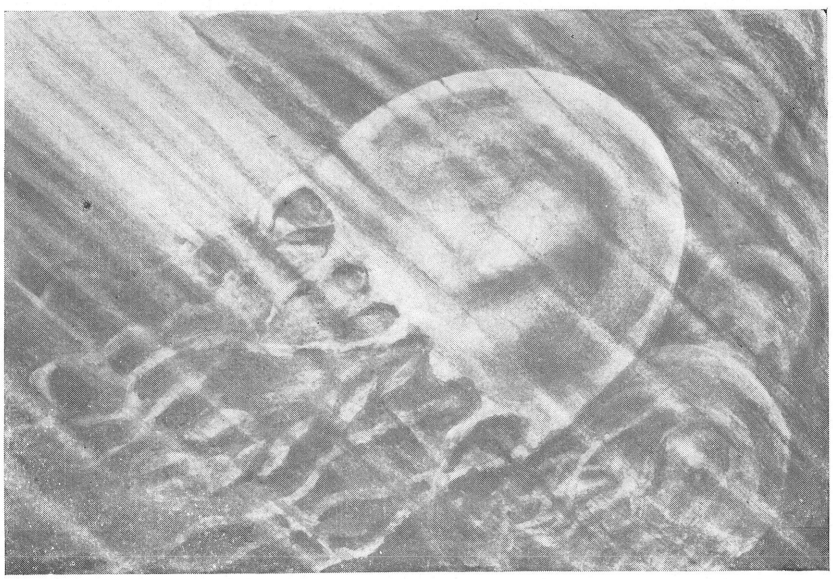

Fig. 2.—An imaginary sketch of Medusina walcotti swimming in the ocean which prevailed in Nebraska during Carboniferous times.

a

b

MEDUSINA WALCOTTI, SP. NOV.

a, apical view; b, oral view showing mouth-cross.
One-half natural size.

MEDUSINA WALCOTTI SOMEWHAT DISTORTED

a, apical view; b, oral view showing mouth-cross.
One-half natural size.

fishes are even cartilaginous. Under especially favoring conditions, impressions of jelly fishes are left in fine sands and muds.

In this connection, it may be of interest to note that the United States Geological Survey boasts of nine thousand specimens of fossil jelly fishes in its collection. Jelly fishes are reported from the Cambrian, Jurassic, Permian and Cretaceous, their period of greatest abundance being the Cretaceous. We recall no reports of fossil Medusae from the Carboniferous outside of Nebraska. Those found in our State are in Upper Pennsylvanian strata.

According to Mr. W. W. Stoner, mechanical engineer in charge of the Burlington Quarries, these jelly fishes occur in considerable numbers. However, in our hurried visit, but three specimens were secured. Two of these are shown in plates 1 and 2. They are of good size, about 7 to 8 inches across (180 to 205 mm.). The convexity is 3 inches (77 mm.). The oral lobes must have been large and are indicated by the distinct radiating angles of the mouth, aptly called the mouth-cross. The mouth-cross is distinctly shown in each of the specimens from the Burlington Quarry. Traces of the more delicate structures are wanting, yet it is not unlikely that some of them may be determined when a large number of specimens is at hand.

The difference in geological horizon, and the distance from regions productive of fossil Medusae, seem to justify describing these jelly fishes as new.

Arrangements have been made for the careful preservation of all specimens exposed in quarry operations at this place, and it is hoped that additional data may be secured.

The University of Nebraska,
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